

## WHAT IS CLAIMED IS:

1. A zero configuration method to allow a computer user to experience "just works" network connectivity for wired network, wireless infrastructure, and wireless ad hoc modes of networking operation, comprising the steps of checking user preferences for network connectivity, scanning for network presence, and connecting to a network based on the user preferences.
2. The method of claim 1, wherein the step of checking user preferences comprising the steps of checking for a default mode setting, checking for a preferred list of network providers, and checking an authentication mode setting.
3. The method of claim 2, further comprising the steps of constructing a basic service set identification (BSSID) list of all networks discovered from the step of scanning, deriving preferred and compatible service set identifiers (SSIDs) from the BSSID list, and wherein the step of connecting to a network comprises the step of connecting to the preferred and compatible SSIDs.
4. The method of claim 3, wherein the step of connecting to the preferred and compatible SSIDs comprises the steps of selecting one of the preferred and compatible SSIDs, attempting to associate with the selected one of the preferred and compatible SSIDs based on the authentication mode setting, and when unable to associate with the selected one of the preferred and compatible SSIDs selecting another of the preferred and compatible SSIDs to which to attempt association until an association is formed.

5. The method of claim 1, wherein the step of checking user preferences comprising the step of checking for an authentication mode setting, and wherein the step of connecting to a network comprises the steps of performing IEEE 802.11 association with a wireless network, and connecting as a valid user with credentials when the authentication mode setting is set to IEEE 802.1X authentication.

6. The method of claim 5, wherein the step of connecting to a network further comprises the step of connecting as an unauthorized user without credentials when the step of connecting as a valid user with credentials fails.

7. The method of claim 1, wherein the step of checking user preferences comprising the step of checking for an authentication mode setting, and wherein the step of connecting to a network comprises the step of performing IEEE 802.11 association with a wireless network when the authentication mode setting is not set to IEEE 802.1X authentication.

8. The method of claim 1, wherein the step of checking user preferences comprises the step of checking for a default mode setting, wherein the step of connecting to a network fails, and when the default mode setting is set to auto mode further comprising the step of selecting an ad hoc mode of operation.

9. The method of claim 8, wherein the step of selecting the ad hoc mode of operation comprises the steps of selecting an ad hoc SSID, and attempting an IEEE 802.11 association with the selected SSID.

10. The method of claim 9, wherein the step of selecting an ad hoc SSID comprises the step of selecting a default ad hoc SSID.

11. The method of claim 9, further comprising the step of monitoring for the appearance of an infrastructure wireless network when the default mode setting is set to auto, infrastructure preferred mode, and connecting to the infrastructure wireless network upon its appearance.

12. The method of claim 9, further comprising the step of monitoring for the appearance of an ad hoc wireless network when the default mode setting is set to auto, ad hoc preferred mode, and connecting to the ad hoc wireless network upon its appearance.

13. The method of claim 1, wherein the step of checking user preferences for networking connectivity comprises the step of checking a connection policy file.

14. The method of claim 1, wherein the step of checking user preferences for networking connectivity comprises the step of checking for a default mode setting, and wherein the default mode setting includes an infrastructure mode allowing connectivity only with infrastructure wireless networks, an ad hoc mode allowing connectivity only with ad hoc wireless

networks, an auto infrastructure preferred mode allowing connectivity with both infrastructure wireless networks and ad hoc wireless networks with a preference for the infrastructure wireless networks, and an auto ad hoc preferred mode allowing connectivity with both infrastructure wireless networks and ad hoc wireless networks with a preference for ad hoc wireless networks.

15. A zero configuration method for enabling nomadic wireless computing, comprising the steps of scanning to determine a presence of wireless networks and other wireless stations (STAs), selectively attempting to connect with the wireless networks in an infrastructure mode, and when unable to connect to any wireless network in an infrastructure mode, selectively attempting to associate with the other wireless stations in an ad hoc mode.

16. The method of claim 15, further comprising the step of operating in an off-line mode when unable to connect to any wireless network in an infrastructure mode and when unable to associate with another wireless station in an ad hoc mode.

17. The method of claim 15, further comprising the steps of detecting a presence of a wireless network not previously detected, and attempting to connect with the wireless network not previously detected when operating in one of the infrastructure, ad hoc and an off-line mode.

18. The method of claim 15, further comprising the steps of creating a listing of all wireless networks detected by the step of scanning, identifying compatible and preferred wireless networks based on user preferences, and wherein the step of attempting to connect to a wireless network comprises the step of first attempting to connect with the preferred wireless networks.

19. The method of claim 15, wherein the step of attempting to connect to a wireless network comprises the steps of determining a user preference for an authentication method, performing an IEEE 802.11 association with the wireless network, and connecting as a valid user with credentials when the authentication mode setting is set to IEEE 802.1X authentication.

20. The method of claim 19, wherein the step of attempting to connect to a wireless network further comprises the step of connecting as an unauthorized user without credentials when the step of connecting as a valid user with credentials fails.

21. The method of claim 15, wherein the step of attempting to connect to a wireless network comprises the steps of determining a user preference for an authentication method, and performing an IEEE 802.11 association with the wireless network when the authentication mode setting is not set to IEEE 802.1X authentication.

22. The method of claim 15, further comprising the step of checking for a user defined mode setting, and wherein the step of selectively attempting to connect with the wireless networks in an infrastructure mode is disabled when the user defined mode is set to ad hoc, and wherein the step of selectively attempting to associate with the other wireless stations in an ad hoc mode is disabled when the user defined mode is set to infrastructure mode.

23. The method of claim 15, further comprising the step of checking for a user preference for an operating mode, and wherein the step of selectively attempting to connect with

the wireless networks in an infrastructure mode is performed before the step of selectively attempting to associate with the other wireless stations in an ad hoc mode when the user preference indicates a preference for the infrastructure mode.

24. The method of claim 15, further comprising the step of checking for a user preference for an operating mode, and wherein the step of selectively attempting to connect with the wireless networks in an infrastructure mode is performed after the step of selectively attempting to associate with the other wireless stations in an ad hoc mode when the user preference indicates a preference for the ad hoc mode.

25. A computer-readable medium having computer-executable instructions for performing steps, comprising checking user preferences for wireless networking connectivity, scanning for wireless network presence, and connecting to a wireless network based on the user preferences.

26. A computer-readable medium having computer-executable instructions for performing steps, comprising scanning to determine a presence of wireless networks and other wireless stations (STAs), selectively attempting to connect with the wireless networks in an infrastructure mode, and when unable to connect to any wireless network in an infrastructure mode, selectively attempting to associate with the other wireless stations in an ad hoc mode.

27. A method of providing a just works user experience to network connectivity in a nomadic computing environment, comprising the steps of:

determining, at an interface specific zero configuration layer, available network connectivity interfaces;

selecting, at the interface specific zero configuration layer, a preferred network connectivity interface;

communicating network connectivity availability from the interface specific zero configuration layer to a generic zero configuration layer;

selecting, at the generic zero configuration layer, a preferred network connectivity from the communicated available network connections; and

establishing network connectivity with the preferred network connection.

Patent Application No. 10/000,000